Behavioral Stress Alters Coronary Vascular Reactivity.

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Behavioral stress is recognized as a contributor to cardiovascular disease. However, the sites and mechanisms of action responsible for the progression of disease are not known. The present study was designed to determine the effects of behavioral stress on coronary vascular responsiveness to the vasoactive peptide, endothelin-1. Borderline hypertensive rats (BHR) were either exposed to air-jet stress 2 hrs/day for 10 days (n=8) or remained in their home cage for 10 days (n=10). Mean arterial pressure and heart rate in conscious rats were not significantly altered by exposure to air-jet stress. Coronary vascular function was evaluated in isolated septal coronary arteries (200-300 um), *in vitro*. Vasoconstriction to endothelin-1, was significantly enhanced at a dose of 1×10^{-9} in vessels from BHR exposed to stress compared to controls. This effect was not due to a nonspecific alteration in contractile responses since the contraction produced by the alpha agonist, phenylephrine, was similar between groups. This finding implicates the coronary vasculature as a potential site of action for cardiovascular disease induced by behavioral stimuli.